

# applied surface science

## Contents

Volume 245 (2005) Nos. 1–4

### Short communications

A combinatorial analysis of deposition parameters and substrates on performance of  $\mu$ c-Si:H thin films by VHF-PECVD

X.-d. Zhang, Y. Zhao, F. Zhu, C.-c. Wei, C.-y. Wu, Y.-t. Gao, J. Sun, G.-f. Hou, X.-h. Geng and S.-z. Xiong

Correlation between the growth-per-cycle and the surface hydroxyl group concentration in the atomic layer deposition of aluminum oxide from trimethylaluminum and water

R.L. Puurunen

The study on the interface adhesion comparison of the  $MgF_2$ ,  $Al_2O_3$ ,  $SiO_2$  and Ag thin films

X. Xu, Z. Tang, J. Shao and Z. Fan

Surface modification of polymer nanofibres by plasma treatment

Q.F. Wei, W.D. Gao, D.Y. Hou and X.Q. Wang

Study on the mechanism of self-organized carbon nanotips without catalyst by plasma-enhanced hot filament chemical vapor deposition

B.B. Wang, S. Lee, H. Yan, C.Z. Gu and B. Wang

Surface confined self-assembled fullerene nanoclusters: a microscopic study

R.R. Sahoo and A. Patnaik

Positive magnetoresistance of Co–Cu film prepared by ion beam assisted deposition

F. Zeng, Q.W. Gen, Y. Gao and F. Pan

Effect of dc negative-bias and silicon introduction on performance of Si–B–N composite film by RF-PECD technique

M. Hua, Y. Xiang, Y. Junfeng and W. Chengbiao

Non-isothermal preform infiltration during the vacuum-assisted resin transfer molding (VARTM) process

M. Grujicic, K.M. Chittajallu and S. Walsh

Characterization and catalytic activity of Cu–Co spinel thin films catalysts

P. Stefanov, I. Avramova, D. Stoichev, N. Radic, B. Grbic and T. Marinova

Deposition of indium nitride films by activated reactive evaporation process – a feasibility study

S.J. Patil, D.S. Bodas, A.B. Mandale and S.A. Gangal

73

Interdiffusion coefficients of various cobalt base alloy coatings for Cu/Au system

C.L. Siu, H.C. Man and C.H. Yeung

79

XPS, TDS and static SIMS studies of binary Pd/Al system properties: correlation between Pd–Al bimetallic interaction and CO adsorption

I. Matolínová, V. Johánek, T. Skála, K. Veltruská and V. Matolín

87

Growth of  $SnO_2$  thin films on self-assembled layers of the short-chain alkoxy silane

J.-L. Zhang, W. Li, Y. Zhai, H. Yang and Y.-P. Wang

94

Evolution of silicon surface microstructures by picosecond and femtosecond laser irradiations

J. Zhu, G. Yin, M. Zhao, D. Chen and L. Zhao

102

Dependence of properties of N–Al codoped p-type  $ZnO$  thin films on growth temperature

J.G. Lu, L.P. Zhu, Z.Z. Ye, F. Zhuge, Y.J. Zeng, B.H. Zhao and D.W. Ma

109

Reactive electron beam evaporated gadolinia films at ambient substrate temperature: optical properties and morphology studies

M. Senthilkumar, N.K. Sahoo, S. Thakur and R.B. Tokas

114

Relationship between the C KVV Auger line shape and layered structure of graphite

A.P. Dementjev, K.I. Maslakov and A.V. Naumkin

128

Dispersive surface properties of glass-ionomer cements determined by inverse gas chromatography

E. Andrzejewska, A. Voelkel, M. Andrzejewski and H. Limanowska-Shaw

135

Effect of Au overlayer on PtSi ohmic contacts with n-InP

W.C. Huang

141

Acid-base surface properties of glass-ionomers determined by IGC

A. Voelkel, E. Andrzejewska, H. Limanowska-Shaw and M. Andrzejewski

149

$CO_2$  laser direct writing of silver lines on epoxy resin from solid film

J.G. Liu, C.H. Chen, J.S. Zheng and J.Y. Huang

155

(Contents continued on page XX)



0169-4332 (20050530) 245:1/4; 1-U

(Continued from outside back cover)

Influence of the oxidative/reductive treatments on the activity of Pt/Ce <sub>0.67</sub> Zr <sub>0.33</sub> O <sub>2</sub> catalyst J. Fan, X. Wu, R. Ran and D. Weng	162
Nitrogen ion implanted nanostructured titania films used in dye-sensitised solar cells and photocatalyst T. Tesfamichael, G. Will and J. Bell	172
Effect of nickel-rich barrier layer on improvement of hot-dip zinc coating S.M.A. Shibli, R. Manu and V.S. Dilimon	179
Deposition of plasma-polymerized hydroxyethyl methacrylate (HEMA) on silicon in presence of argon plasma D.S. Bodas, S.M. Desai and S.A. Gangal	186
Laser-evoked coloration in polymers H.Y. Zheng, D. Rosseinsky and G.C. Lim	191
Phosphorous passivation of In <sub>0.53</sub> Ga <sub>0.47</sub> As using MOVPE and characterization of Au–Ga <sub>2</sub> O <sub>3</sub> (Gd <sub>2</sub> O <sub>3</sub> )–In <sub>0.53</sub> Ga <sub>0.47</sub> As MIS capacitor S. Pal, S.M. Shivaprasad, Y. Aparna and B.R. Chakraborty	196
Deposition of PTFE thin films by RF plasma sputtering on ⟨1 0 0⟩ silicon substrates D.S. Bodas, A.B. Mandale and S.A. Gangal	202
Epitaxial growth of tetracene on the Ag(1 1 0) surface B. Lu, H.J. Zhang, H. Huang, H.Y. Mao, Q. Chen, H.Y. Li, P. He and S.N. Bao	208
Corrosion behavior of carbon-implanted M5 alloy in 1 M H <sub>2</sub> SO <sub>4</sub> D.Q. Peng, X.D. Bai and B.S. Chen	215
Characterization of PNIPAAm photografted on PET and PS surfaces P.S. Curti, M.R. de Moura, W. Veiga, E. Radovanovic, A.F. Rubira and E.C. Muniz	223
Optically variable imaging using nanoimprint technique V. Grigaliūnas, D. Jucius, S. Tamulevičius, A. Guobienė and V. Kopustinskas	234
Pressure dependence of radical densities in various gas discharges M.T. Kim	240
Dispersion of nonaqueous Co <sub>2</sub> Z ferrite powders with titanate coupling agent and poly(vinyl butyral) H.-I. Hsiang, C.-C. Chen and J.-Y. Tsai	252
Surface analysis of the proton exchange membranes prepared by pre-irradiation induced grafting of styrene/divinylbenzene into crosslinked thin PTFE membranes J. Li, S. Ichizuri, S. Asano, F. Mutou, S. Ikeda, M. Iida, T. Miura, A. Oshima, Y. Tabata and M. Washio	260
The effect of the oxygen concentration and the rf power on the zinc oxide films properties deposited by magnetron sputtering I. Sayago, M. Aleixandre, L. Arés, M.J. Fernández, J.P. Santos, J. Gutiérrez and M.C. Horrillo	273
Growth mode during initial stage of chemical vapor deposition Y. Kajikawa and S. Noda	281
Design and development of artificial neural networks for depositing powders in coating treatment M.-D. Jean, C.-D. Liu and J.-T. Wang	290
Mesoporous silica thin films prepared by argon plasma treatment of sol–gel-derived precursor J. Zhang, A. Palaniappan, X. Su and F.E.H. Tay	304
Thickness dependence of properties of ZnO:Ga films deposited by rf magnetron sputtering X. Yu, J. Ma, F. Ji, Y. Wang, C. Cheng and H. Ma	310
Laser surface modified ductile iron by pulsed Nd:YAG laser beam with two-dimensional array distribution Y. Chen, C.H. Gan, L.X. Wang, G. Yu and A. Kaplan	316

CdO thin films: a study of their electronic structure by electron spin resonance spectroscopy A. Gulino and G. Tabbi	322
Chemical deposition and characterization of copper indium diselenide (CISe) thin films H.M. Pathan and C.D. Lokhande	328
Laser conditioning and multi-shot laser damage accumulation effects of HfO <sub>2</sub> /SiO <sub>2</sub> antireflective coatings Y. Zhao, T. Wang, D. Zhang, J. Shao and Z. Fan	335
Influence of sulfidation ambience on the properties of nanocrystalline ZnS films prepared by sulfurizing the as-sputtered ZnO films R. Zhang, B. Wang, H. Zhang and L. Wei	340
Corrosive sliding wear behavior of laser clad Mo <sub>2</sub> Ni <sub>3</sub> Si/NiSi intermetallic coating X.D. Lu and H.M. Wang	346
Dip coating of dielectric and solder mask epoxy polymer layers for build-up purposes S. Siau, A. Vervaet, S. Degrande, E. Schacht and A.V. Calster	353
X-ray study of structural reorganization in phthalocyanine containing Langmuir-Blodgett heterostructures V. Erokhin, S. Carrara, C. Paternolli, L. Valkova, S. Bernstorff and C. Nicolini	369
Effects of Cr and Nb doping on the ferroelectricity of chemical-solution-deposited Bi <sub>3.5</sub> Nd <sub>0.5</sub> Ti <sub>3</sub> O <sub>12</sub> films T.-L. Chang and W.-T. Lin	376
Effect of thermal annealing on the optical and electronic properties of ZnO thin films grown on p-Si substrates W.G. Han, S.G. Kang, T.W. Kim, D.W. Kim and W.J. Cho	384
Photoluminescence and characteristics of terbium-doped AlN film prepared by magnetron sputtering F.S. Liu, W.J. Ma, Q.L. Liu, J.K. Liang, J. Luo, L.T. Yang, G.B. Song, Y. Zhang and G.H. Rao	391
Calculation of the emission performance of the carbon nanotube array Z. Yuning, L. Wei, Z. Xiaobing and W. Baoping	400
Hydrophobic and textured ZnO films deposited by chemical bath deposition: annealing effect V.R. Shinde, C.D. Lokhande, R.S. Mane and S.-H. Han	407
Characteristics and luminescence of Ge doped ZnO films prepared by alternate radio frequency magnetron sputtering D.H. Fan, Z.Y. Ning and M.F. Jiang	414
Laser processing of diamond-like carbon-metal composites R.J. Narayan	420

Author Index

I

Subject Index

V

